APPENDIX I TO PART 73—CATEGORY 1 AND 2 RADIOACTIVE MATERIALS

TABLE I–1—QUANTITIES OF CONCERN THRESHOLD LIMITS

Radionuclides	Category 1		Category 2	
	Terabecquerels (TBq)	Curies (Ci) [1]	Terabecquerels (TBq)	Curies (Ci) [1]
Americium-241	6×10^{1}	1.6×10^{3}	6×10^{-1}	1.6×10^{1}
Americium-241/Be	6×10^{1}	1.6×10^{3}	6×10^{-1}	1.6×10^{1}
Californium-252	2×10^{1}	5.4×10^{2}	2×10^{-1}	5.4
Curium-244	5×10^{1}	1.4×10^{3}	5×10^{-1}	1.4×10^{1}
Cobalt-60	3×10^{1}	8.1×10^{2}	3×10^{-1}	8.1
Cesium-137	1×10^{2}	2.7×10^{3}	1	2.7×10^{1}
Gadolinium-153	1×10^{3}	2.7×10^{4}	1×10^{1}	2.7×10^{2}
Iridium-192	8×10^{1}	2.2×10^{3}	8×10^{-1}	2.2×10^{1}
Promethium-147	4×10^{4}	1.1×10^{6}	4×10^{2}	1.1×10^{4}
Plutonium-238	6×10^{1}	1.6×10^{3}	6×10^{-1}	1.6×10^{1}
Plutonium-239/Be	6×10^{1}	1.6×10^{3}	6×10^{-1}	1.6×10^{1}
Radium-226	4×10^{1}	1.1×10^{3}	4×10^{-1}	1.1×10^{1}
Selenium-75	2×10^{2}	5.4×10^{3}	2	5.4×10^{1}
Strontium-90 (Y-90)	1×10^{3}	2.7×10^{4}	1×10^{1}	2.7×10^{2}
Thulium-170	2×10^{4}	5.4×10^{5}	2×10^{2}	5.4×10^{3}
Ytterbium-169	3×10^{2}	8.1×10^{3}	3	8.1×10^{1}

[1] The regulatory standard values are given in TBq. Curie (Ci) values are provided for practical usefulness only and are rounded after conversion.

Calculations Concerning Multiple Sources or Multiple Radionuclides

The "sum of fractions" methodology for evaluating combinations of multiple sources or multiple radionuclides, is to be used in determining whether a facility or activity meets or exceeds the threshold limits and is thus subject to the physical and/or information security requirements of this part.

I. If multiple sources and/or multiple radionuclides are present in a facility or activity, the sum of the fractions of the activity of each of the radionuclides must be determined to verify the facility or activity is less than the Category 1 or 2 limits of Table 1, as appropriate. Otherwise, if the calculated sum of the fractions ratio, using the following equation, is greater than or equal to 1.0, then the facility or activity meets or exceeds the threshold limits of Table 1 and the applicable physical and/or information security provisions of this part apply.

II. Use the equation below to calculate the sum of the fractions ratio by inserting the actual activity of the applicable radionuclides from Table 1 or of the individual sources (of the same radionuclides from Table 1) in the numerator of the equation and the corresponding threshold activity limit from Table 1 in the denominator of the equation. Sum of the fraction calculations must be performed in metric values (*i.e.*, TBq) and the numerator and denominator values must be in the same units.

R_1 = activity for radionuclides or source number 1

R_2 = activity for radionuclides or source number 2

R_N = activity for radionuclides or source number n

AR_1 = activity limit for radionuclides or source number 1

AR_2 = activity limit for radionuclides or source number 2

AR_N = activity limit for radionuclides or source number n

$$\sum_{1}^{n}\left[\frac{R_1}{AR_1}+\frac{R_2}{AR_2}+\frac{R_n}{AR_n}\right]\geq 1.0$$

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PART 74—MATERIAL CONTROL AND ACCOUNTING OF SPECIAL NUCLEAR MATERIAL

Subpart A—General Provisions

Sec.

Subpart B—General Reporting and Recordkeeping Requirements